

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Kouji WAKI et al
Serial No.: 10/580,100
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Title: ULTRASONOGRAPH
Group: 3777
Examiner: Hien Ngoc NGUYEN
Confirmation No.: 5080

REPLY BRIEF

Mail Stop: Appeal Brief
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

06 February 2012

Sir:

In response to the 06 December 2011 Examiner's Answer, Appellants hereby resubmit their reply brief as follows.

Status of Claims

Claims 6, 11 and 12 were previously cancelled.

Claims 1-5 and 7-14 have been rejected.

Claims 1-5, 7-10, 13, and 14 are pending. This appeal involves each of these claims. Further, the above claims continue to be accurately provided in the Claims Appendix attached to Applicant's Appeal Brief.

Grounds of Rejection to be Reviewed on Appeal

I. Whether Claims 1, 9, and 14 are unpatentable under 35 U.S.C. §102(b) over U.S. Patent No. 6,068,597 issued to Lin

Argument

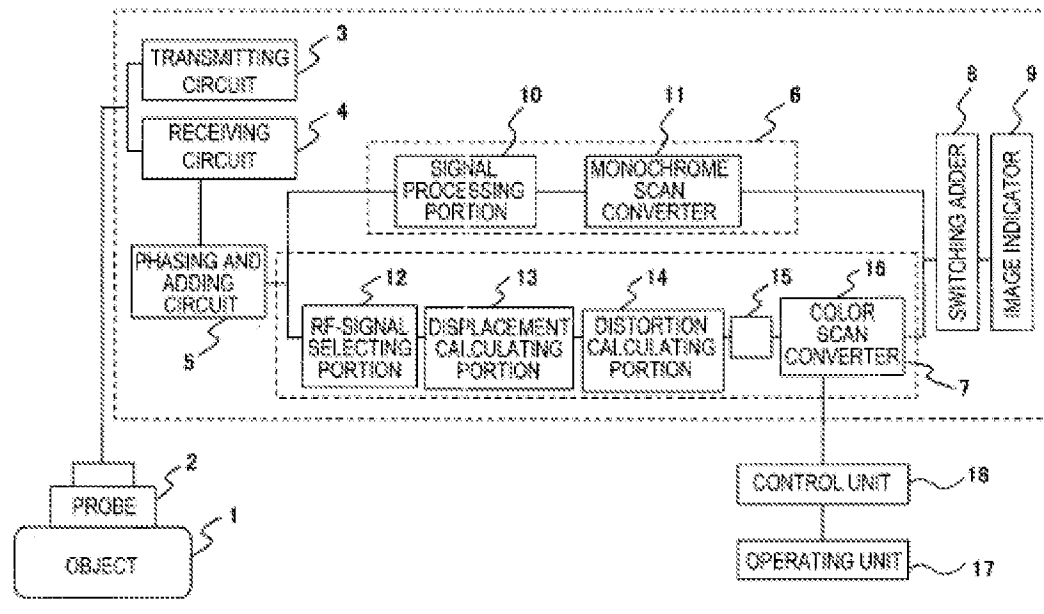
Claims 1, 9, and 14 stand rejected under 35 U.S.C. §102(b) as being anticipated by Lin. Claims 2-5, 7, 8, and 10-13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Lin in view of Miga. For the reasons set forth below, these rejections should be reversed.

Independent Claims 1 and 14 (and all claims dependent therefrom) are not anticipated or suggested by Lin. The rejection of these claims under 35 U.S.C. §102(b) is improper, because the Office Action has failed to properly interpret all the limitations recited in the claims, and consequently, failed to make a prima facie case of anticipation.

Applicant's present invention is directed toward arrangements which improve medical diagnostic abilities (e.g., speed and accuracy of diagnosis), by assisting in diagnosis by color differentiating a portion of an ultrasonic image which is of interest. For example, if a tumor consists of hard tissue which is harder than nearby normal soft tissue, Applicant's present invention would display the overall ultrasonic image via a monochrome image, for example, and would also detect elastic information and would then differentiate or emphasize the tumor by overlaying a specific color hue (e.g., red) over the region of the hard tissue tumor. **One important feature** of Applicant's present invention, is that there are **two images generated (i.e., an ultrasonic image and an elastic image), which are overlaid over one another, or arranged (e.g., displayed for side-by-side viewing).**

Applicant's **FIG. 1** (taken as one example; reproduced herewith for convenience) illustrates a configuration having two branches for producing **separate images**.

FIG. 1



i.e., a first branch having components 10, 11 **generates the ultrasonic image**, whereas a second branch having components 12-16 **generate the elastic image**. Switching adder 8, for example, **combines (i.e., overlays) such images** for a resultant composite image where the “hard tissue” tumor would be highlighted via a red color.

In terms of **distinguishing claim features/limitations**, independent **claim 1** (taken as an example) recites (in relevant part),

“...**an ultrasound image structuring unit** configured to **generate an ultrasound image** on the basis of a reflected echo signal received by the ultrasonic probe;

an elastic image structuring unit configured to obtain a strain or an elastic modulus of the elasticity of the object of a region corresponding to the ultrasound image on the basis of the reflected echo signal and **generates a color elastic image**;

a display configured to **overlay the ultrasound image to the color elastic image,**
or arrange the ultrasound image and the color elastic image and displays the
resultant image on a screen;"

Regarding the applied **Lin** reference, it is respectfully submitted that Lin is deficient
as a reference in that Lin appears **not to disclose an arrangement which generates**
two images or which overlaps two images or rearranges two images (e.g., for side-
by-side viewing). More particularly, using Lin's **FIG. 8** (reproduced herewith for
convenience) as an example, it appears that **only one frame is generated** in color

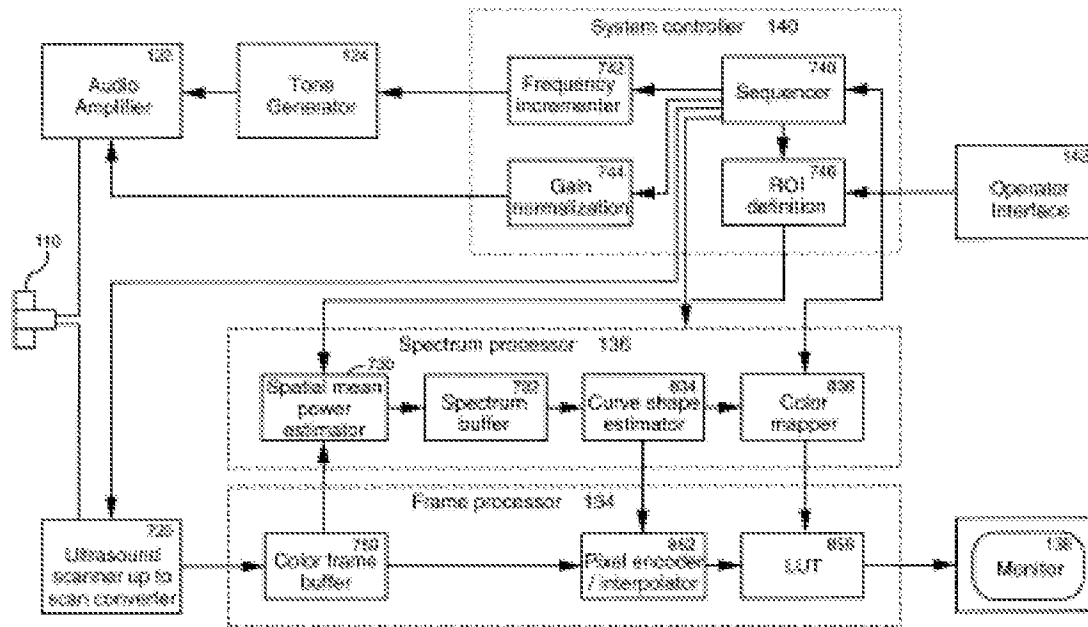


Fig. 8

frame buffer 750, which frame is then processed by pixel encoder/interpolator 852 and
look-up-table (LUT) 856, to produce the image on the monitor 138. It is respectfully noted
that **a second image is not generated or overlapped**, and instead, the original frame
transitioning from the color frame buffer 750 only has each pixel color treated utilizing
value from the LUT. More particularly, as stated in Lin's paragraph [00039], for example,

“Encoded values at each pixel in the vibrational resonance ultrasonic Doppler image are mapped into colors using the LUT, and displayed as a color image on the monitor 138.” Thus, Lin is deficient as stated.

No other previously-applied and/or known reference cures the major deficiencies mentioned above with respect to the above-discussed reference(s). Given that the previously-applied and/or known references are mutually deficient in at least one regard, it is respectfully submitted that the previously-applied and/or known references (whether taken individually, or in combination) would not have disclosed (i.e., anticipated) or suggested Applicant's claimed invention.

Accordingly, anticipation of Applicant's independent claims by Lin is believed to be improper under 35 U.S.C. §102(b), and the 103 rejection likewise is believed to be improper. Reconsideration and reversal of such rejections, are respectfully requested.

CONCLUSION

For the foregoing reasons, the final rejection of the claims should be reversed.

FEES

The Reply Brief fee (if necessary) is submitted herewith.

AUTHORIZATION

Please charge any shortage in fees due in connection with the filing of this Notice of Appeal, including extension of time fees, to Deposit Account No. 01-2135 (Docket. No. 389.46211X00) and please credit any excess fees to such deposit account.

Respectfully submitted,
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PJS